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PRODUCTION AND CONSUMPTION OF POTASH.

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U. S. DEPARTMENT OF AGRICULTURE
LETTER

FROM

THE SECRETARY OF AGRICULTURE,

TRANSMITTING

IN RESPONSE TO A SENATE RESOLUTION OF FEBRUARY 5, 1919,
A REPORT RELATIVE TO THE PRODUCTION AND CONSUMPTION
OF POTASH AND THE AMOUNTS IMPORTED INTO THIS COUNTRY.

FEBRUARY 19, 1919.—Referred to the Committee on Agriculture and Forestry and
ordered to be printed.

DEPARTMENT OF AGRICULTURE,
Washington, February 17, 1919.

SIR: In response to Senate resolution No. 440, I have the honor to
submit the following statement:

(1) In 1913 practically all the potash consumed in the country was
imported. The following table gives the importations of the more
important potash salts from Germany in that year:

	Tons.	Tons K ₂ O.
Muriate or chloride of potash.....	237,630	118,815
Sulphate of potash.....	44,349	21,554
Kainit (potassium chloride and magnesium sulphate).....	521,176	64,626
Manure salts (impure muriate of potash).....	250,529	50,106
Total.....	1,053,684	255,101

In addition, small amounts of crude carbonate came from Canada, of
refined carbonate, caustic, cyanide and other chemical salts of potassium
from Germany, and of potassium nitrate from India. These latter
salts were used by the chemical industries and did not enter the
fertilizer trade.

(2) Information in the possession of the department indicates a
production in the United States during 1918 of about 53,600 tons of
actual potash (K₂O). Of this amount, approximately 28,000 tons
were produced from the brine lakes of western Nebraska, 11,000 from

Searles Lake, Cal., and 2,600 from alunite. Detailed figures with regard to the production by the various other plants are not yet available for the year 1918. A conservative estimate, however, would probably show about 5,000 tons of K_2O from kelp and 7,000 tons from all other sources, including cement mills, blast furnaces, sugar mill wastes and wood ashes.

It is impossible to separate these amounts in terms of sulphate and muriate because of the fact that the largest single source, the Nebraska Lakes brines, contains a mixture of sulphate and carbonate of potassium with a small percentage, not to exceed 2 per cent, of muriate. The production from Searles Lake and from kelp is all in the form of muriate. The production from alunite is in the form of sulphate and part of the material produced by cement mills is in the form of sulphate and part in the form of muriate.

(3) The only information in the department with reference to the amount of potash now on hand in the United States has been obtained in the form of estimates from certain of the large producers. It is their opinion that there is now stored in the United States, approximately 60,000 tons of potash carrying material, representing about 15,000 tons of actual potash (K_2O). The price of this material at present is approximately \$4.25 a unit in carload lots, as compared with prices in 1913 ranging from \$0.70 to \$1 a unit.

(4) The department has no information showing the amount of potash used in the tobacco industry prior to 1914 or since. It has been established, through experimental investigations, that potassium chloride tends to injure the burning qualities of tobacco so that tobacco growers generally use sulphate or carbonate rather than muriate in fertilizing their crop.

(5) The department has no information as to the amount of potash consumed in the citrus industry either prior to 1914 or since. The citrus growers generally have believed that potassium chloride has a deleterious effect on the quality of the fruit and have uniformly insisted upon having sulphate or carbonate.

(6) The department has no information regarding the amount of potash consumed on deciduous orchards either prior to 1914 or since. So far as it is aware, there has been no preference shown in recent years for any one of the potash salts by deciduous orchard growers.

(7) The question as to the possible production of potash in the United States is susceptible of two interpretations. If "possible production" means the amount which can be produced by plants either now being operated or completed and ready for operation, the amount that can be produced in 1919 is at least 100,000 tons of actual potash (K_2O).

If, on the other hand, it means the potential production from known American sources, this amount unquestionably may be greatly increased. Estimates by the Bureau of Soils, based upon analyses of samples from practically all the cement mills of the United States, show that it is possible to recover from this source alone about 100,000 tons K_2O a year. By alterations now being made in one of the plants at Searles Lake, it is estimated that the production from this source will be increased to something like 60,000 tons K_2O a year. The installations in western Nebraska, operating on the brine lakes of that region, are capable of largely increased production, while a complete utilization of the kelp beds on the Pacific coast and the

installation of apparatus for recovering potash from the gases of blast furnaces would undoubtedly furnish a very heavy tonnage of potash.

It is impossible, with the data now available, to estimate the cost of recovering potash from these sources, but it is a fact, recognized by the operators themselves as well as by experts of the department who have visited the plants now in operation, that modifications of practice and changes in methods will undoubtedly result in substantially reducing the present cost of production.

Very truly, yours,

D. F. HOUSTON,
Secretary.

[The PRESIDENT OF THE SENATE.

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